

***Open Science Grid:  
The Big Questions and Issues  
Open Science Grid Meeting  
Fermilab, January 12th 2004***

# Open Science Grid

## The Big Questions

***Petabytes of complex data explored and analyzed by 1000s of globally dispersed scientists, in hundreds of teams***

- ◆ “An aggressive program of work to federate many of the currently disjoint grid resources at labs and universities into a single scalable, engineered, and managed grid.”
- ◆ ***Structure and Organization:***
  - ❑ Who manages it ? What is the organizational structure ?
  - ❑ How is it envisaged to operate ? What constitutes successful operation ?
  - ❑ Why would other fields join the OSG, namely what could they gain:  
Resources ? Common services ? Operational Support ? Other?
  - ❑ What are the obligations and restrictions on the members:  
Donate/share Resources ? Share in the Development/Deployment of Common Services ? Help with Operational Support ?  
Subscribe to Certain modes of Operation at One's Site ? Other ?
  - ❑ What is the relationship to other projects ?

# Building and Operating an Open Science Grid

## ◆ *System Engineering*

- Is there an overall software architecture, especially for common system software components and services ? If so what is it ?
- How to develop a common, secure AAA infrastructure that is mutually compatible among sites and projects ? What does it look like ?
- How much of the development can adopt/adapt existing components and services ? How much upcoming services (e.g. OGSA) ? Which concepts and components are new ? (e.g. end-to-end services with a global view)
- How does one strike the right balance between the evolutionary approach of integrating existing and upcoming components, and the “top down” design of new (end-to-end) services and development-strategies appropriate for management of a national (and global) system with a feasible level of operational manpower.
  - Is there a breakpoint above which top-down design and development for scalability and automated management is required ? If so, how to determine the breakpoints, and the associated requirements for engineering and development ?